D3030 Installation Manual

DSI / Phase 7

WARNING: For your safety the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or death.

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

— WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Clear the room, building or area of all occupants.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

— Installation and service must be performed by a qualified installer, service agency or the gas supplier.

AVERTISSEMENT: Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

— Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

— QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

- Ne pas tenter d'allumer d'appareils.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment.
- Évacuez la pièce, le bâtiment ou la zone.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

— L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

JLA™

Your **in**house Laundry Partner

JLA Limited
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Ripponden
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Telephone: 01422 822282 / Fax: 01422 824390

JLA Part No. 113161

Retain This Manual In A Safe Place For Future Reference

This product embodies advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble-free operation.

ONLY qualified technicians should service this equipment.

OBSERVE ALL SAFETY PRECAUTIONS displayed on the equipment or specified in the installation manual included with the dryer.

The following "**FOR YOUR SAFETY**" caution **must be** posted near the dryer in a prominent location.

FOR YOUR SAFETY	POUR VOTRE SÉCURITÉ
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.	Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

We have tried to make this manual as complete as possible and hope you will find it useful. The manufacturer reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models. The illustrations included in this manual may not depict your particular dryer **exactly**.

Important

For your convenience, log the following information:

DATE OF PURCHASE _____ **MODEL NO.** D3030

DISTRIBUTOR'S NAME _____

Serial Number(s) _____

_____

_____

Replacement parts can be obtained from your distributor or **JLA**. When ordering replacement parts from **JLA**, you can FAX your order to **JLA** at 01422 824390 or telephone your order directly to the **JLA** Parts Department at 01422 822282. Please specify the dryer **model number** and **serial number** in addition to the **description** and **part number**, so that your order is processed accurately and promptly.

"IMPORTANT NOTE TO PURCHASER"

Information **must be** obtained from your local gas supplier on the instructions to be followed if the user smells gas. These instructions **must be** posted in a prominent location near the dryer.

IMPORTANT

YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY OR THE STEAM SUPPLY BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) **STANDARDS.**

"Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper operation."

«Attention: Au moment de l'entretien des commandes, étiquetez tous les fils avant de les débrancher. Des erreurs de câblage peuvent entraîner un fonctionnement inadéquat et dangereux.»

CAUTION

DRYERS SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.

WARNING

CHILDREN SHOULD NOT BE ALLOWED TO PLAY ON OR NEAR THE DRYER(S).

CHILDREN SHOULD BE SUPERVISED IF NEAR DRYERS IN OPERATION.

FOR YOUR SAFETY

DO NOT DRY MOP HEADS IN THE DRYER.

DO NOT USE DRYER IN THE PRESENCE OF DRY CLEANING FUMES.

WARNING

UNDER NO CIRCUMSTANCES should the dryer door switch or the heat circuit devices ever be disabled.

WARNING

The dryer *must never be* operated with any of the back guards, outer tops, or service panels removed. PERSONAL INJURY OR FIRE COULD RESULT.

WARNING

DRYER *MUST NEVER BE* OPERATED WITHOUT THE LINT FILTER/SCREEN IN PLACE, EVEN IF AN EXTERNAL LINT COLLECTION SYSTEM IS USED.

IMPORTANT

PLEASE OBSERVE ALL SAFETY PRECAUTIONS displayed on the equipment and/or specified in the installation manual included with the dryer.

Dryers ***must not be*** installed or stored in an area where it **will be** exposed to water or weather.

The wiring diagram for the dryer is located in the front electrical control box area.

IMPORTANT

Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

Table of Contents

SECTION I

SAFETY PRECAUTIONS

WARNING: For your safety, the information in this manual ***must be*** followed to minimize the risk of fire or explosion or to prevent property damage, personal injury, or loss of life.

WARNING: **The dryer *must never be* operated with any of the back guards, outer tops, or service panels removed. PERSONAL INJURY OR FIRE COULD RESULT.**

1. **DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

2. Purchaser/user should consult the local gas supplier for proper instructions to be followed in the event the user smells gas. The instructions **should be** posted in a prominent location.

3. WHAT TO DO IF YOU SMELL GAS:

   a. **DO NOT** try to light any appliance.

   b. **DO NOT** touch any electrical switch.

   c. **DO NOT** use any phone in your building.

   d. Clear the room, building, or area of **ALL** occupants.

   e. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.

   f. If you **cannot** reach your gas supplier, call the fire department.

4. Installation and service **must be** performed by a qualified installer, service agency, or gas supplier.

5. Dryer(s) **must be** exhausted to the outdoors.

6. Although **JLA** produces a very versatile dryer, there are some articles that, due to fabric composition or cleaning method, **should not be** dried in it.

WARNING: Dry only water washed fabrics. ***DO NOT*** dry articles spotted or washed in dry cleaning solvents, a combustible detergent, or "all purpose" cleaner. **EXPLOSION COULD RESULT.**

WARNING: ***DO NOT*** dry rags or articles coated or contaminated with gasoline, kerosene, oil, paint, or wax. **EXPLOSION COULD RESULT.**

WARNING: ***DO NOT*** dry mop heads. Contamination by wax or flammable solvents will create a fire hazard.

WARNING: ***DO NOT*** use heat for drying articles that contain plastic, foam, sponge rubber, or similarly textured rubber materials. Drying in a heated basket (tumbler) may damage plastics or rubber and may be a fire hazard.

7. A program **should be** established for the inspection and cleaning of lint in the burner area, exhaust ductwork, and area around the back of the dryer. The frequency of inspection and cleaning can best be determined from experience at each location.

WARNING: The collection of lint in the burner area and exhaust ductwork can create a potential fire hazard.

8. For personal safety, the dryer **must be** electrically grounded in accordance with local codes and/or the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION or in Canada, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

NOTE: Failure to electrically ground the dryer properly will VOID THE WARRANTY.

9. **UNDER NO CIRCUMSTANCES** should the dryer door switch or the heat circuit devices ever be disabled.

WARNING: PERSONAL INJURY OR FIRE COULD RESULT SHOULD THE DRYER DOOR SWITCH OR THE HEAT CIRCUIT DEVICES EVER BE DISABLED.

10. This dryer is not to be used in the presence of dry cleaning solvents or fumes.

11. Remove articles from the dryer as soon as the drying cycle has been completed.

WARNING: Articles left in the dryer after the drying and cooling cycles have been completed can create a fire hazard.

12. **READ AND FOLLOW ALL CAUTION AND DIRECTION LABELS ATTACHED TO THE DRYER**.

13. For safety, proper operation, and optimum performance, the dryer **must not be** operated with a load less than sixty-six percent (66%), 20 lb (9 kg) of its rated capacity.

WARNING: YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY OR THE STEAM SUPPLY BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) **STANDARDS**.

IMPORTANT: Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

SECTION II

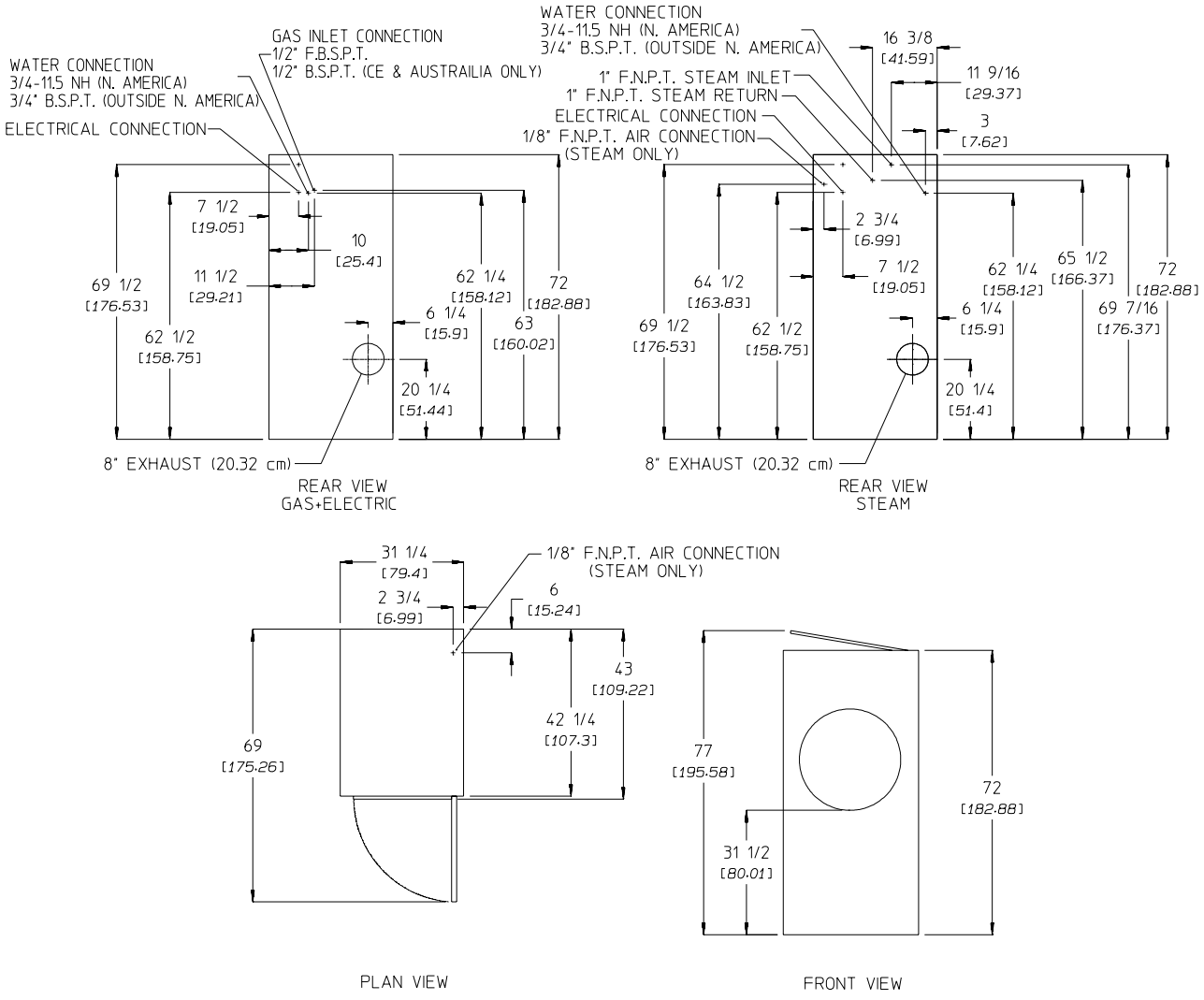
SPECIFICATIONS

MAXIMUM CAPACITY (DRY WEIGHT)			30 lb	**13.6 kg**
TUMBLER DIAMETER			30”	**76.2 cm**
TUMBLER DEPTH			30”	**76.2 cm**
TUMBLER VOLUME			12.27 cu ft	**347.45 L**
TUMBLER/DRIVE MOTOR			1/2 hp	**0.373 kW**
BLOWER/FAN MOTOR			N / A	
DOOR OPENING (DIAMETER)			21-1/2”	**54.61 cm**
DOOR SILL HEIGHT			31-1/2”	**80.01 cm**
WATER CONNECTION			3/4”-11.5 NH (North America)	
			3/4” B.S.P.T. (Outside North America)	
DRYERS PER 20’/40’ CONTAINER			12 / 28	
DRYERS PER 48’/53’ TRUCK			32 / 36	
Gas	VOLTAGE AVAILABLE		120-460V 1,3ø 50/60 Hz	
	APPROXIMATE NET WEIGHT		535 lb	**242.7 kg**
	APPROXIMATE SHIPPING WEIGHT		585 lb	**265.4 kg**
	AIRFLOW	60 Hz	600 cfm	**17 cmm**
		50 Hz	500 cfm	**14.16 cmm**
	HEAT INPUT		95,000 Btu/hr	**23,940 kcal/hr**
	EXHAUST CONNECTION (DIAMETER)		8”	**20.3 cm**
	COMPRESSED AIR CONNECTION		N / A	
	COMPRESSED AIR VOLUME		N / A	
	INLET PIPE CONNECTION		1/2” F.B.S.P.T.	
			1/2” B.S.P.T. (CE and Australia Only)	
Electric	VOLTAGE AVAILABLE		208-460V 1,3ø 2,3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		535 lb	**242.7 kg**
	APPROXIMATE SHIPPING WEIGHT		585 lb	**265.4 kg**
	AIRFLOW	60 Hz	600 cfm	**17 cmm**
		50 Hz	500 cfm	**14.16 cmm**
	EXHAUST CONNECTION (DIAMETER)		8”	**20.3 cm**
	COMPRESSED AIR CONNECTION		N / A	
	COMPRESSED AIR VOLUME		N / A	
	OVEN SIZE			
	kW	Btu/hr	**kcal/hr**	
	15	51,200	**12,900**	
	20	68,300	**17,200**	
	24	81,900	**20,600**	
	30	102,400	**25,800**	
Steam	VOLTAGE AVAILABLE		120-460V 1,3ø 50/60 Hz	
	APPROXIMATE NET WEIGHT		580 lb	**263.1 kg**
	APPROXIMATE SHIPPING WEIGHT		630 lb	**285.8 kg**
	AIRFLOW	60 Hz	600 cfm	**17 cmm**
		50 Hz	500 cfm	**14.16 cmm**
	STEAM CONSUMPTION		104 lb/hr	**47.2 kg/hr**
	OPERATING STEAM PRESSURE		125 psi max	**8.6 bar**
	EXHAUST CONNECTION (DIAMETER)		8”	**20.3 cm**
	COMPRESSED AIR CONNECTION		1/8” F.N.P.T.	
	COMPRESSED AIR VOLUME		0.5 cfh	**0.01 cmh**
	BOILER HORSEPOWER (NORMAL LOAD)		3.0 Bhp	
	SUPPLY CONNECTION		1” F.N.P.T.	
	RETURN CONNECTION		1” F.N.P.T.	

Shaded areas are stated in metric equivalents 6/25/04

NOTE: The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

Specifications



* OPERATING HEIGHT FOR STEAM MODELS.
** AIR CONNECTION LOCATED BEHIND REAR ELECTRICAL BOX.

6/25/04

NOTE: The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

SECTION III
INSTALLATION PROCEDURES

Installation **should be** performed by competent technicians in accordance with local and state codes. In the absence of these codes, the installation **must conform** to applicable American National Standards: ANSI Z223.1-LATEST EDITION (National Fuel Gas Code) or ANSI/NFPA NO. 70-LATEST EDITION (National Electrical Code) or in Canada, the installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION (for General Installation and Gas Plumbing) or Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION (for Electrical Connections).

A. UNPACKING/SETTING UP

Remove protective shipping material (i.e., plastic wrap and optional shipping box) from dryer.

IMPORTANT: Dryer ***must be*** transported and handled in an upright position at **ALL** times.

The dryer can be moved to its final location while still attached to the skid or with the skid removed. To unskid the dryer, locate and remove the four (4) bolts securing the base of the dryer to the wooden skid. Two (2) are at the rear base (remove the back panel for access), and two (2) are located in the bottom of the lint chamber. To remove the two (2) bolts located in the lint chamber area, remove the lint door.

With the skid removed, to make it easier to slide the dryer into its final position, slightly lower **ALL** four (4) leveling legs, so that the dryer will slide on the legs instead of the base frame.

To increase bearing life and improve efficiency, the dryer **should be** tilted slightly to the rear.

The lint coop of this model dryer is supported during shipping by a bracket. ***REMOVE THIS BRACKET BEFORE STARTING THE DRYER***.

Leveling Dryer

The dryer is equipped with four (4) leveling legs, one (1) at each corner of the base. Two (2) are located at the rear of the dryer base, and two (2) are located in the lint chamber (coop). To increase bearing life and improve efficiency, the dryer **should be** tilted slightly to the rear.

B. LOCATION REQUIREMENTS

Before installing the dryer, be sure the location conforms to local codes and ordinances. In the absence of such codes or ordinances the location **must conform** with the National Fuel Gas Code ANSI.Z223.1 LATEST EDITION, or in Canada, the installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION (for General Installation and Gas Plumbing).

1. The dryer **must be** installed on a sound level floor capable of supporting its weight. Carpeting **must be** removed from the floor area that the dryer is to rest on.

IMPORTANT: "The dryer ***must be*** installed on noncombustible floors only."

2. The dryer **must not be** installed or stored in an area where it will be exposed to water and/or weather.

3. The dryer is for use in noncombustible locations.

4. Provisions for adequate air supply **must be** provided as noted in this manual (refer to **Fresh Air Supply Requirements** in **Section D**).

5. Clearance provisions **must be** made from combustible construction as noted in this manual (refer to **Dryer Enclosure Requirements** in **Section C**).

6. Provisions **must be** made for adequate clearances for servicing and for operation as noted in this manual (refer to **Dryer Enclosure Requirements** in **Section C**).

7. The dryer **must be** installed with a proper exhaust duct connection to the outside as noted in this manual (refer to **Exhaust Requirements** in **Section E**).

8. Dryer **must be** located in an area where correct exhaust venting can be achieved as noted in this manual (refer to **Exhaust Requirements** in **Section E**).

IMPORTANT: Dryer ***should be*** located where a minimum amount of exhaust duct **will be** necessary.

9. The dryer **must be** installed with adequate clearance for air openings into the combustion chamber.

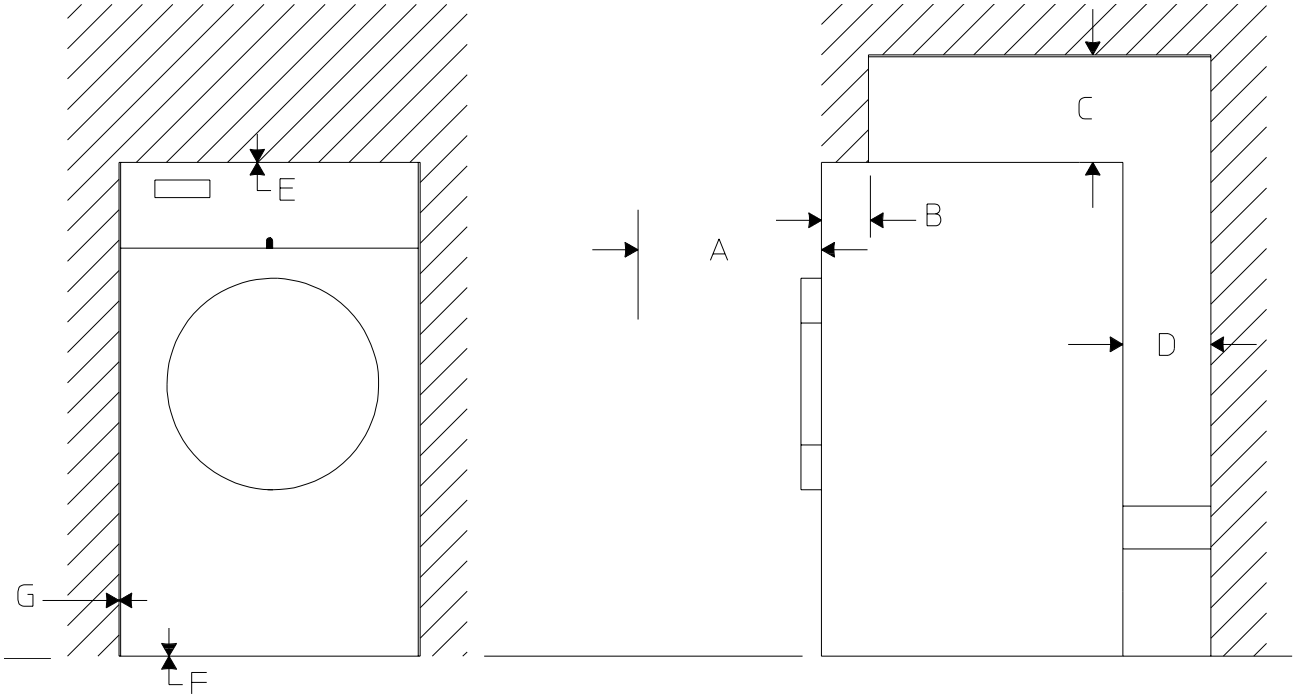
CAUTION: This dryer produces combustible lint and ***must be*** exhausted to the outdoors. Every 6 months, inspect the exhaust ducting and remove any lint buildup.

IMPORTANT: Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible material.

NOTE: Allowances ***must be*** made for opening the control door.



A 30-inches (76.2 cm) for optimum opening of load door.

B The maximum thickness of the bulkhead is 4-inches (10.16 cm). For electric dryers the maximum thickness of the bulkhead is 1-inch (2.54 cm) within 3-inches (7.62 cm) from the top of the control door.

C For gas and electric dryers a minimum overhead clearance of 12-inches (30.48 cm) is required, providing no sprinkler is located above the dryer. For steam dryers or if a sprinkler is located above the dryer, 18-inches (45.72 cm) is required.

D Dryer should be positioned 12-inches (30.48 cm) away from the nearest obstruction and 24-inches (60.96 cm) is recommended for ease of installation, maintenance, and service.

E 2-inch (5.08 cm) minimum is required for opening the control door.

F Flooring should be level or below dryer cabinet for ease of removing panels during maintenance.

G Dryers may be positioned sidewall to sidewall, however a 1/16" (1.5875 mm) minimum allowance must be made for the opening and closing of the control door, along with the removal of panels during maintenance.

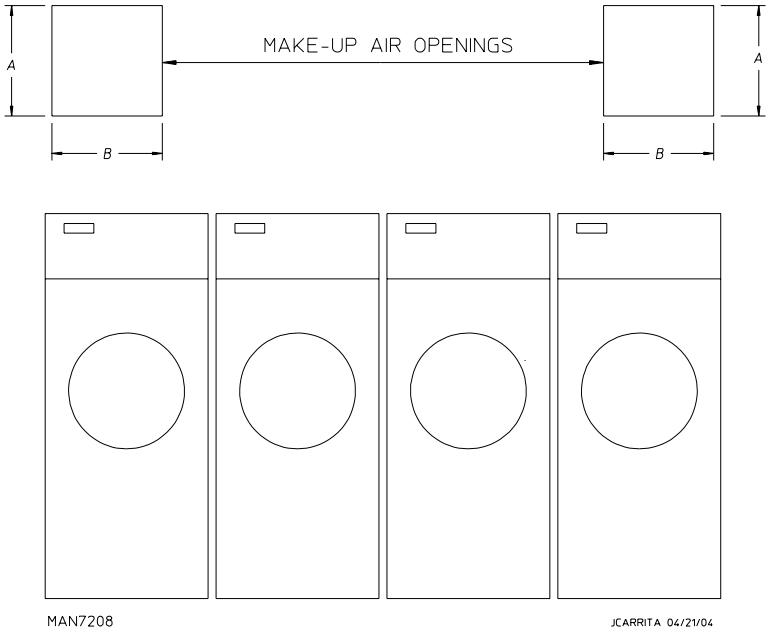
D. FRESH AIR SUPPLY REQUIREMENTS

When the dryer is operating, it draws in room air, heats it, passes this air through the tumbler, and exhausts it out of the building. Therefore, the room air must be continually replenished from the outdoors. If the make-up air is inadequate, drying time and drying efficiency will be adversely affected. Ignition problems and sail switch "fluttering" problems may result, as well as premature motor failure from overheating. The dryer must be installed with provisions for adequate combustion and make-up air supply.

Air supply (make-up air) must be given careful consideration to ensure proper performance of each dryer. As a general rule, an unrestricted air entrance from the outdoors (atmosphere) measuring a minimum size of 8-inches by 12-inches (20.32 cm by 30.5 cm) is required for each dryer. (Based on 1 square inch per 1,000 Btu.)

To compensate for the use of registers or louvers used over the openings, this area must be increased by approximately thirty-three percent (33%). Make-up air openings should not be located in an area directly near where exhaust vents exit the building.

It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they must be set up in such a manner that the make-up air is distributed equally to all the dryers.



A = 12-inches (30.5 cm) **B = 16-inches (40.64 cm)**

EXAMPLE: For a bank of 4 dryers, 2 unrestricted openings measuring 12-inches by 16-inches (30.5 cm by 40.64 cm) are acceptable.

Allowances must be made for remote or constricting passageways or where dryers are located at excessive altitudes or predominantly low pressure areas.

IMPORTANT: Make-up air ***must be*** provided from a source free of dry cleaning solvent fumes. Make-up air that is contaminated by dry cleaning solvent fumes will result in irreparable damage to the motors and other dryer components.

NOTE: Component failure due to dry cleaning solvent fumes will VOID THE WARRANTY.

E. EXHAUST REQUIREMENTS

Exhaust ductwork **should be** designed and installed by a qualified professional. Improperly sized ductwork will create excessive back pressure, which results in slow drying, increased use of energy, and shutdown of the burner by the airflow (sail) switch, burner hi-limit, or lint chamber hi-heat protector thermostat. The dryer **must be** installed with a proper exhaust duct connection to the outside.

CAUTION: This dryer produces combustible lint and ***must be*** exhausted to the outdoors.

Where possible, it is suggested to provide a separate (single) exhaust duct for each dryer.

CAUTION: IMPROPERLY SIZED OR INSTALLED EXHAUST DUCTWORK CAN CREATE A POTENTIAL FIRE HAZARD.

The exhaust ductwork **should be** laid out in such a way that the ductwork travels as directly as possible to the outdoors with as few turns as possible. The shape of the ductwork is not critical as long as the minimum cross section area is provided. Single or independent dryer venting is recommended.

It is suggested that the use of 90° turns be avoided; use 30° or 45° angles instead.

The ductwork **should be** smooth inside with no projections from sheet metal screws or other obstructions, which will collect lint. When adding ducts, the ducts to be added should overlap the duct to which it is connected. **ALL** ductwork joints **must be** taped to prevent moisture and lint from escaping into the building. Additionally, inspection doors **should be** installed at strategic points in the exhaust ductwork for periodic inspection and cleaning.

NOTE: When the exhaust ductwork passes through a wall, ceiling, or roof made of combustible materials, the opening ***must be*** 2-inches (5.08 cm) larger than the duct (all the way around). The duct ***must be*** centered within this opening.

To protect the outside end of the horizontal ductwork from the weather, a 90° elbow bent downward **should be** installed where the exhaust exits the building. If the ductwork travels vertically up through the roof, it **should be** protected from the weather by using a 180° turn to point the opening downward. In either case, allow at least twice the diameter of the duct between the duct opening and the nearest obstruction (i.e., roof or ground level).

IMPORTANT: ***DO NOT*** use screens, louvers, or caps on the outside opening of the exhaust ductwork.

IMPORTANT: Exhaust back pressure measured by a manometer at the dryer exhaust duct area ***must be*** no less than 0 and ***must not exceed*** 0.3 inches (0.74 mb) of water column (W.C.).

IMPORTANT: **It is recommended** that exhaust or booster fans not be used in the exhaust ductwork system.

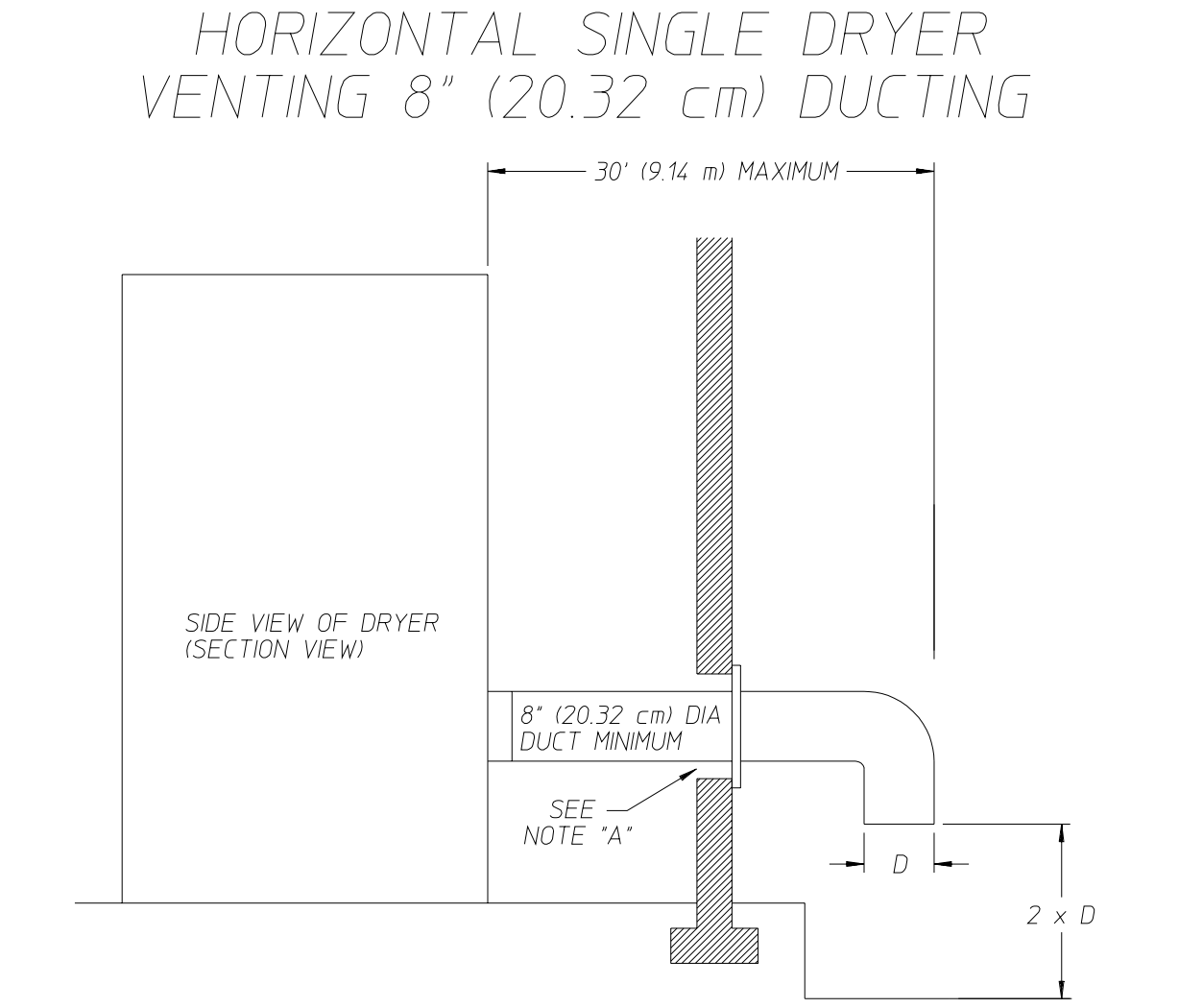
NOTE: As per the National Fuel Gas Code, "Exhaust ducts for Type 2 clothes dryers shall be constructed of sheet metal or other noncombustible material. Such ducts shall be equivalent in strength and corrosion resistance to ducts made of galvanized sheet steel not less than 26 gauge (0.0195-inches [0.5 mm]) thick."

SINGLE DRYER VENTING

HORIZONTAL VENTING

When horizontal single 8-inch (20.32 cm) venting is used, the ductwork to the outlet **cannot** exceed 30 feet (9.14 meters), refer to **Illus. A below**. This calculation of 30 feet (9.14 meters) compensates or allows for the use of a maximum of only one (1) elbow.

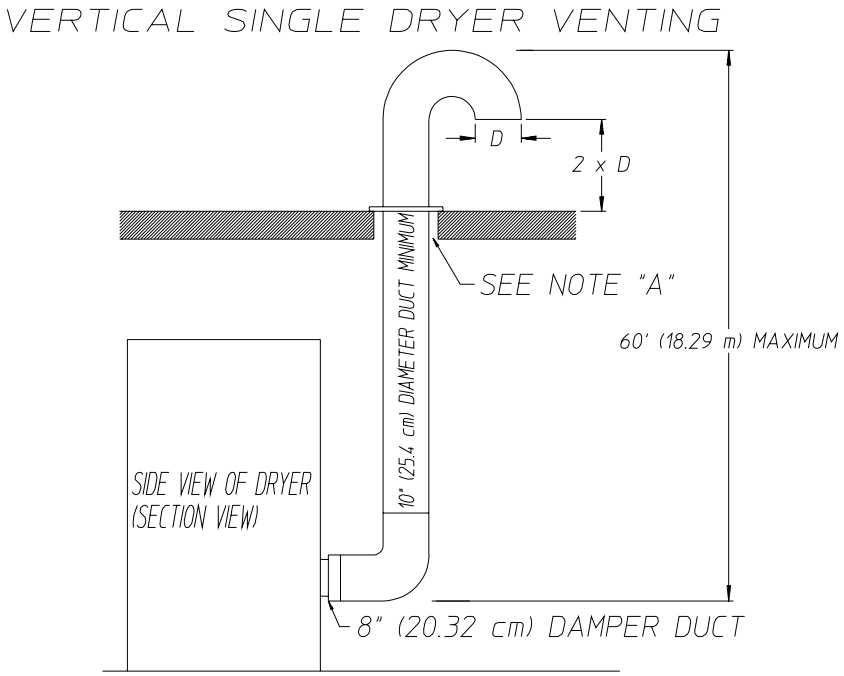
Illus. A



VERTICAL VENTING

When vertical single venting is used, the minimum duct size is 10-inches (25.4 cm) refer to **Illus. B below**, the ductwork from the dryer to the outside outlet **cannot** exceed 60 feet (18.29 meters), refer to **Illus. B below**. This calculation compensates for the use of a maximum of three (3) elbows including the two (2) elbows creating the 180° (turned downward) outside outlet.

Illus. B



NOTE A: OPENING MUST BE 2-INCHES (5.08 cm) LARGER THAN THE DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

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If the length of the duct run or quantity of elbows used exceeds the above noted specifications, the cross section area of the ductwork **must be** increased in proportion to the number of elbows or duct run added.

IMPORTANT: For extended ductwork runs, the cross section area of the duct can only be increased to an extent. For extended ductwork runs, a professional heating, ventilating, and air-conditioning (HVAC) firm ***should be*** consulted for proper venting information.

MULTIPLE DRYER (COMMON) VENTING

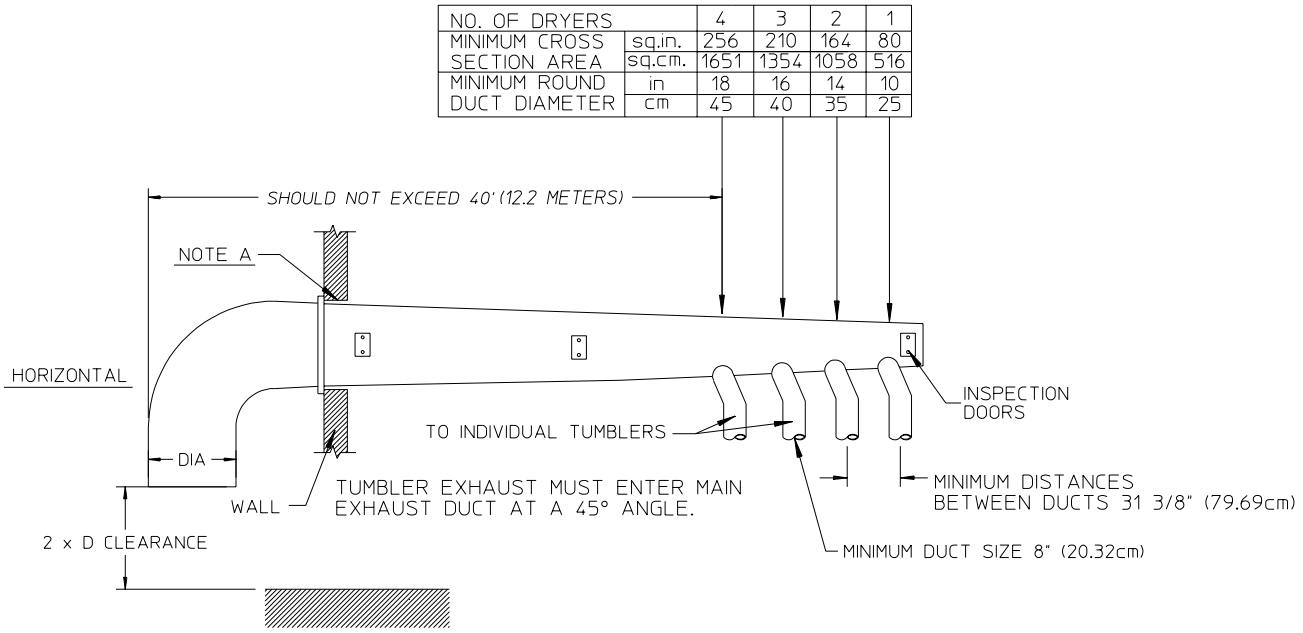
HORIZONTAL VENTING

If it is not feasible to provide separate exhaust ducts for each dryer, ducts for individual dryers may be channeled into a common main duct. Each dryer is provided with a back draft damper. The individual ducts should enter the bottom or side of the main duct at an angle not more than 45° in the direction of the airflow. No more than four (4) dryers **should be** connected to one (1) main common duct run.

The main common duct may be any shape as long as the minimum cross-sectional area is provided. The main duct **should be** tapered with the diameter increasing before each individual 8-inch (20.32 cm) duct is added (refer to **Illus. C and Illus. D**).

Illus. C

Multiple Dryer Venting (Horizontal)
With 8-inch (20.32 cm) Diameter Exhaust Connections at Common Duct



Horizontal venting **must not exceed** 40 feet (12.2 meters) – this calculation compensates for the use of a maximum of only one (1) elbow, which is the outside outlet protection.

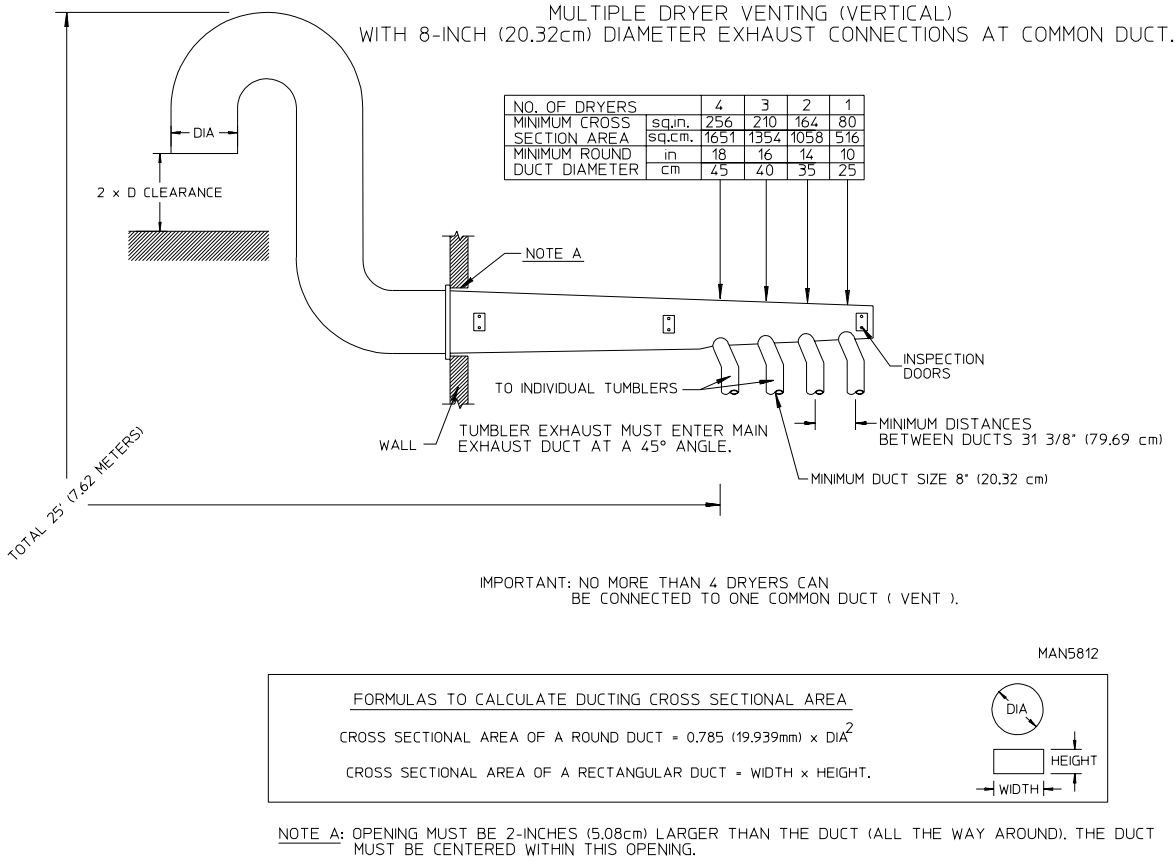
NOTE: Ductwork ***should be*** laid out in such a manner where allowances are made at rear area of the dryer for removal of rear service panels or guards.

Illus. C shows the minimum cross section area for horizontal multiple dryer venting. These figures **must be** increased in proportion if the main duct run from the last dryer to where it exhausts has numerous elbows or is unusually long.

IMPORTANT: For extended ductwork runs, the cross section area of the duct can only be increased to an extent. For extended ductwork runs, a professional heating, ventilating, and air-conditioning (HVAC) firm ***should be*** consulted for proper venting information.

VERTICAL VENTING

Illus. D



Vertical venting **must not exceed** 25 feet (7.62 meters) – this calculation compensates for the use of a maximum of three (3) elbows including the two (2) elbows creating the 180º (turned downward) outside outlet protection.

IMPORTANT: No more than four (4) dryers maximum ***should be*** connected to one (1) main common duct with a vertical run.

NOTE: Ductwork ***should be*** laid out in such a manner where allowances are made at rear area of the dryer for removal of rear service panels or guards.

Illus. D shows the minimum cross section area for vertical multiple dryer venting. These figures **must be** increased in proportion if the main duct run from the last dryer to where it exhausts has numerous elbows or is unusually long.

IMPORTANT: For extended ductwork runs, the cross section area of the duct can only be increased to an extent. For extended ductwork runs, a professional heating, ventilating, and air-conditioning (HVAC) firm ***should be*** consulted for proper venting information.

F. ELECTRICAL INFORMATION

1. Electrical Requirements

ALL electrical connections must be made by a properly licensed and competent electrician. This is to ensure that the electrical installation is adequate and conforms to local and state regulations or codes. In the absence of such codes, **ALL** electrical connections, materials, and workmanship **must conform** to the applicable requirements of the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION or in Canada, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

IMPORTANT: Failure to comply with these codes or ordinances, and/or the requirements stipulated in this manual can result in personal injury or component failure.

NOTE: Component failure due to improper installation will VOID THE WARRANTY.

Each dryer **should be** connected to an independently protected branch circuit. The dryer **must be** connected with copper wire only. ***DO NOT use aluminum wire, it can create a fire hazard***. The copper conductor wire/cable **must be** of proper ampacity and insulation in accordance with electric codes for making **ALL** service connections.

NOTE: The use of aluminum wire will VOID THE WARRANTY.

IMPORTANT: A separate protected circuit ***must be*** provided to each dryer.

NOTE: An individual ground circuit must be provided to each dryer, do not daisy chain.

IMPORTANT: The dryer ***must be*** connected to the electric supply shown on the data label. In the case of 208 VAC or 240 VAC, the supply voltage must match the electric service specifications of the data label **exactly**.

IMPORTANT: The wire size ***must be*** properly sized to handle the related current.

WARNING: **208 VAC AND 240 VAC ARE NOT THE SAME**. Any damage done to dryer components due to improper voltage connections will automatically VOID THE WARRANTY.

NOTE: Component failure due to improper voltage application will VOID THE WARRANTY.

NOTE: The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

2. Electrical Service Specifications

a. Gas and Steam Models Only

ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)						
IMPORTANT: 208 VAC AND 240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.						
NOTES: A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data. B. Circuit breakers are thermal-magnetic (industrial) motor curve type ONLY. For others, calculate/ verify correct breaker size according to appliance amp draw rating and type of breaker used. C. Circuit breakers for 3-phase (3Ø) dryers must be 3-pole type.						
SERVICE VOLTAGE	**PHASE**	**WIRE SERVICE**	**APPROX. AMP DRAW**		**FUSING** Dual Element Time Delay	**CIRCUIT BREAKER**
			60 Hz	50 Hz		
NON-REVERSING						
120	1ø	2	8.7	—	15	15
208	1ø	2	5.5	—	15	15
240	1ø	2	4.8	4.6	15	15
208	3ø	3	3.1	—	15	15
240	3ø	3	3.3	4.2	15	15
380-400	3ø	4*	—	2.2	15	15
416	3ø	4*	—	2.3	15	15
460/480	3ø	3	2.1	—	15	15
REVERSING						
208	3ø	3	5.0	—	15	15
220	3ø	3	—	6.8	15	15
240	3ø	3	5.6	7.4	15	15
380-400	3ø	3	—	3.4	15	15
416	3ø	3	—	3.6	15	15

* 3-Wire available. 12/4/06

b. Electric Models Only

ALL electrically heated dryers **must be** connected to the electric service shown on the dryer's data label. The connecting wires **must be** properly sized to handle the rated current.

ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)						
IMPORTANT: 208 VAC AND 240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.						
NOTES: A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data. B. Circuit breakers are thermal-magnetic (industrial) type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used. C. Circuit breakers for 3-phase (3Ø) dryers must be 3-pole type.						
SERVICE VOLTAGE	**PHASE**	**WIRE SERVICE**	**APPROX. AMP DRAW**		**FUSING** Dual Element Time Delay	**CIRCUIT BREAKER**
			60 Hz	50 Hz		
20 kW						
208	1ø	2	102	—	150	150
220	1ø	2	97	—	125	125
240	1ø	2	88	88	125	125
380	3ø	4*	—	35	50	50
22 kW						
400	3ø	4*	—	37	50	50
460	3ø	3	30	—	40	40
24 kW						
208	3ø	3	72	—	90	90
240	3ø	3	63	62	80	80
380	3ø	3	40	—	50	50
380	3ø	4*	—	43	60	60
416	3ø	4*	—	38	50	50
25.2 kW						
440	3ø	3	35	—	50	50

* 3-Wire available. 12/4/06

3. Grounding

A ground (earth) connection **must be** provided and installed in accordance with state and local codes. In the absence of these codes, grounding **must conform** to applicable requirements of the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION, or in Canada, the installation **must conform** to applicable Canada Standards: Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION. The ground connection may be to a proven earth ground at the location service panel.

For added personal safety, when possible, it is suggested that a separate ground wire (size per local codes) be connected from the ground connection of the dryer to a grounded cold water pipe. ***DO NOT ground to a gas pipe or hot water pipe***. The grounded cold water pipe must have metal-to-metal connection **ALL** the way to the electrical ground. If there are any nonmetallic interruptions, such as, a meter, pump, plastic, rubber, or other insulating connectors, they **must be** jumped out with a wire (size per local codes) and securely clamped to bare metal at both ends.

IMPORTANT: For personal safety and proper operation, the dryer ***must be*** grounded.

Provisions are made for ground connection in each dryer at the electrical service connection area.

4. Electrical Connections

A wiring diagram is located inside the control box for connection data.

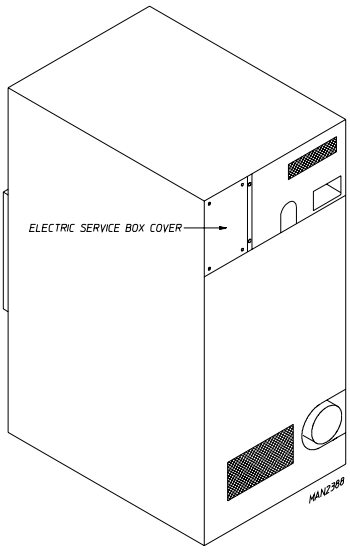
If local codes permit, power to the dryer can be made by the use of a flexible U.L. listed power cord/pigtail (wire size **must conform** to rating of dryer), or the dryer can be hard wired directly to the service breaker panel. In both cases, a strain relief **must be** installed where the wiring enters the dryer.

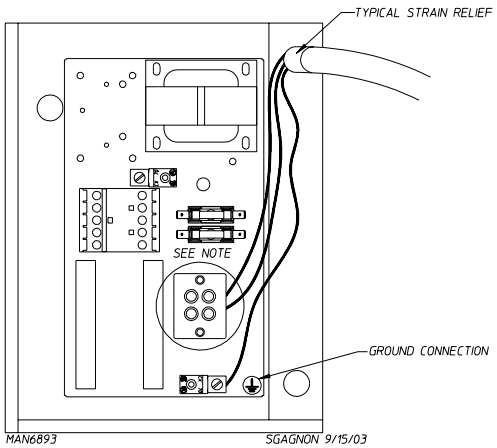
a. Gas and Steam Models Only

IMPORTANT: A separate protected circuit ***must be*** provided to each dryer.

1) Single-Phase (1ø) Wiring Connections/Hookup

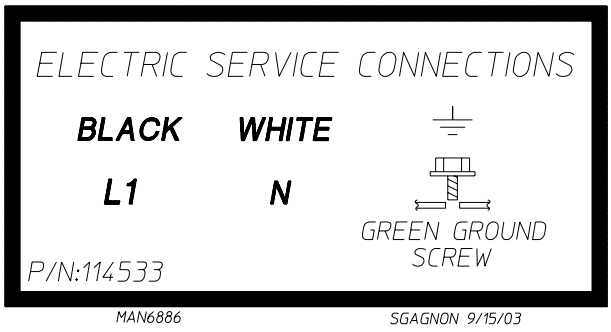
The electrical input connections on **ALL** single-phase (1ø) gas and steam dryers are made into the rear service box located at the upper left area of the dryer. The ground connection is made to the copper lug, also provided in this box. To gain access, the service box cover ***must be*** removed.



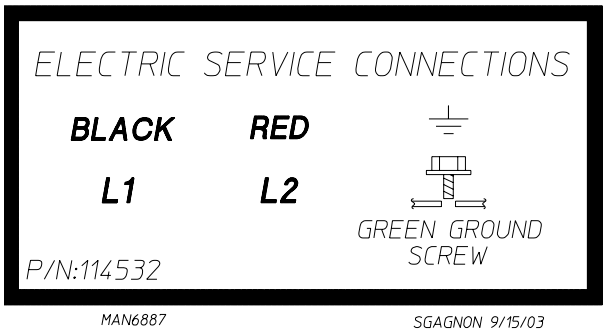


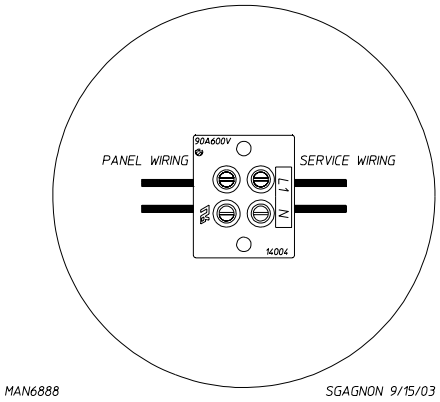
Single-Phase Electrical Lead Connections		
Black + Positive	White or Red + Neutral or L2	Green + Ground

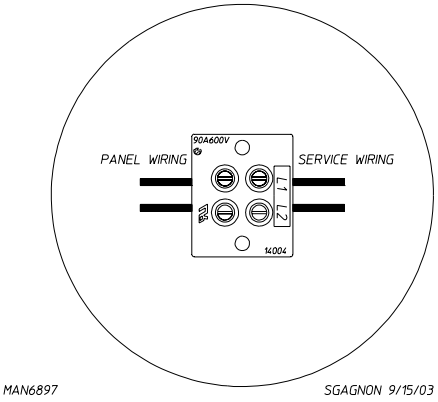
FOR 110V APPLICATIONS



FOR 208-240V APPLICATIONS





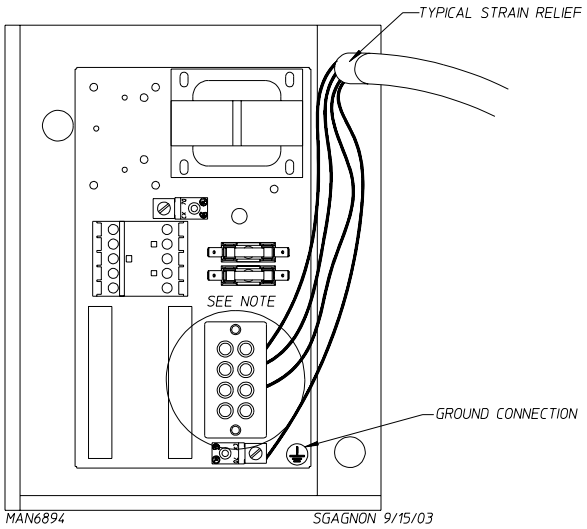


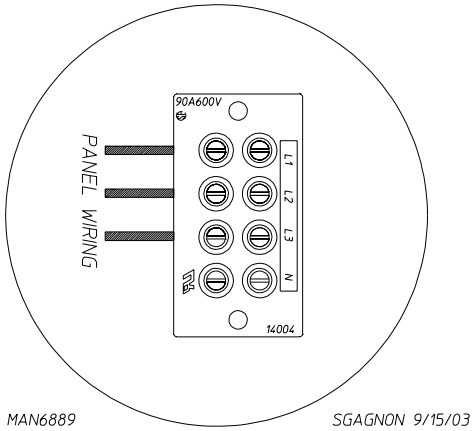
A ground lug is provided in the rear electrical box to connect your service ground.

2) 3-Phase (3ø) Wiring Connections/Hookup

The electrical connections on **ALL** 3-phase (3ø) gas and steam dryers are made into the rear service box located at the upper left area of the dryer. The electrical connections are made at the power distribution block located in the service box. The ground connection is made to the copper lug, also provided in this box. To gain access, the service box cover ***must be*** removed.

The neutral will only be used on 4-wire service. This is typical for 380-416V, 50 Hz.





b. Electrically Heated Models Only

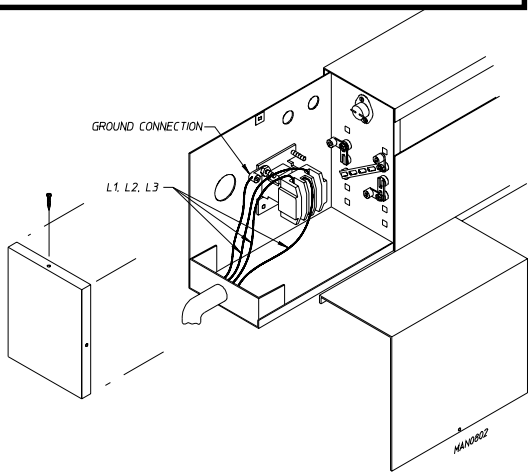
The electrical input connections are made to the contactor located inside the electric oven assembly at the rear center upper section of the dryer. The ground connection is made to a copper lug also provided in this area. To gain access, remove oven rear service cover.

The only electrical input connections to the dryer are the 3-phase (3ø) power leads (L1, L2, L3, and sometimes neutral) and ground. Single-phase (1ø) power for the control circuit and for any single-phase (1ø) motors (if present) is done internally to the dryer by the factory at the oven contactor. No single-phase (1ø) input connection is required on a 3-phase (3ø) dryer.

CAUTION: The dryer ***must be*** grounded. A ground lug has been provided for this purpose.

Input connection wiring **must be** sized properly to handle the dryer's current draw. This information is printed on the dryer's data label.

IMPORTANT: A strain relief ***must be*** used where the input wiring enters the oven assembly.



G. GAS INFORMATION

It is your responsibility to have **ALL** plumbing connections made by a qualified professional to ensure that the gas plumbing installation is adequate and conforms to local and state regulations or codes. In the absence of such codes, **ALL** plumbing connections, materials, and workmanship **must conform** to the applicable requirements of the National Fuel Gas Code ANSI Z223.1-LATEST EDITION, or in Canada, the Canadian Installation Codes CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION.

IMPORTANT: FAILURE TO COMPLY WITH CODES OR ORDINANCES, AND/OR REQUIREMENTS IN THIS MANUAL, CAN RESULT IN PERSONAL INJURY AND IMPROPER OPERATION OF THE DRYER.

The dryer and its individual shutoff valves **must be** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa). The dryer **must be** isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure test of the gas supply system at test pressures equal to or less than 1/2 psig (3.5 kPa).

IMPORTANT: Failure to isolate or disconnect the dryer from supply as noted can cause irreparable damage to the gas valve, which will VOID THE WARRANTY.

WARNING: FIRE OR EXPLOSION COULD RESULT DUE TO FAILURE OF ISOLATING OR DISCONNECTING THE GAS SUPPLY AS NOTED.

1. Gas Supply

   The gas dryer installation **must meet** the American National Standard...National Fuel Gas Code ANSI Z223.1-LATEST EDITION, or in Canada, the Canadian Installation Codes CAN/CGA-B149.1 M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION, as well as local codes and ordinances and **must be** done by a qualified professional.

NOTE: Undersized gas piping will result in ignition problems, slow drying, increased use of energy, and can create a safety hazard.

The dryer **must be** connected to the type of heat/gas indicated on the dryer data label. If this information does not agree with the type of gas available, ***DO NOT operate the dryer***. Contact the reseller who sold the dryer or contact **JLA**.

IMPORTANT: Any burner changes or conversions ***must be*** made by a qualified professional.

The input ratings shown on the dryer data label are for elevations up to 2,000 feet (609.6 meters), unless elevation requirements of over 2,000 feet (609.6 meters) were specified at the time the dryer order was placed with the factory. The adjustment or conversion of dryers in the field for elevations over 2,000 feet (609.6 meters) is made by changing each burner orifice. If this conversion is necessary, contact the distributor who sold the dryer or contact **JLA**.

IMPORTANT: THIS GAS DRYER **IS NOT** PROVIDED WITH AN INTERNAL GAS SUPPLY SHUTOFF AND AN EXTERNAL GAS SUPPLY SHUTOFF ***MUST BE*** PROVIDED.

2. Technical Gas Data

a. Gas Specifications

	TYPE OF GAS			
	NATURAL		LIQUID PROPANE	
Manifold Pressure*	3.5 inches W.C.	**8.7 mb**	10.5 inches W.C.	**26.1 mb**
In-Line Pressure	6.0 - 12.0 inches W.C.	**14.92 - 29.9 mb**	11.0 inches W.C.	**27.4 mb**

Shaded areas are stated in metric equivalents

* Measured at outlet side of gas valve pressure tap when gas valve is on.

b. Gas Connections

Inlet connection _____ 1/2" N.P.T.
Inlet supply size _____ 1/2" Diameter Pipe (minimum)
Btu/hr input (per dryer) _____ 95,000 (23,940 kcal/hr)

1) Natural Gas

Regulation is controlled by the dryer's gas valve's internal regulator. Incoming supply pressure **must be** consistent between a minimum of 6.0 inches (14.92 mb) and a maximum of 12.0 inches (29.9 mb) water column (W.C.) pressure.

2) Liquid Propane (L.P.) Gas

Dryers made for use with L.P. gas have the gas valve's internal pressure regulator blocked open so that the gas pressure **must be** regulated upstream of the dryer. The pressure measured at each gas valve pressure tap **must be** a consistent 10.5 inches (26.1 mb) water column. There is no regulator or regulation provided in an L.P. dryer. The water column pressure **must be** regulated at the source (L.P. tank) or an external regulator **must be** added to each dryer.

		TYPE OF GAS						Liquid Propane Conversion Kit Part Number
Btu/hr Rating	**kcal/hr Rating**	Natural			Liquid Propane			
		Qty.	D.M.S.*	Part No.	Qty.	D.M.S.*	Part No.	
95,000	**23,940**	2	#30	140819	2	#48	140804	883361

Shaded area is stated in metric equivalent

* Drill Measurement Size (D.M.S.) equivalents are as follows:

Natural Gas ..... #30 = 0.1285" (3.2639 mm).
Liquid Propane Gas ..... #48 = 0.0760" (1.9304 mm).

3. Piping Connections

ALL components/materials **must conform** to National Fuel Gas Code Specifications ANSI Z223.1-LATEST EDITION, or in Canada, CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION (for General Installation and Gas Plumbing), as well as local codes and ordinances and **must be** done by a qualified professional. It is important that gas pressure regulators meet applicable pressure requirements, and that gas meters be rated for the total amount of **ALL** the appliance Btu being supplied.

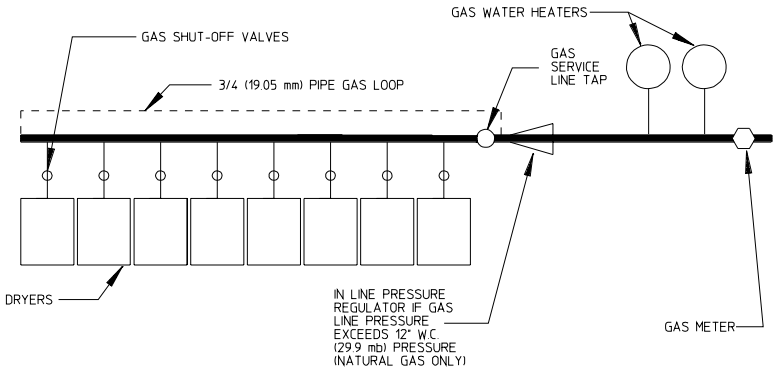
The dryer is provided with a 1/2" N.P.T. inlet pipe connection located at the upper left rear of the dryer. The minimum pipe size (supply line) to the dryer is 1/2-inch diameter. For ease in servicing, the gas supply line of each dryer must have its own shutoff valve.

IMPORTANT: The gas supply line to each dryer ***must be*** a minimum of 1/2-inch (12.7 mm). ***DO NOT*** REDUCE THIS PIPE SIZE REQUIREMENT.

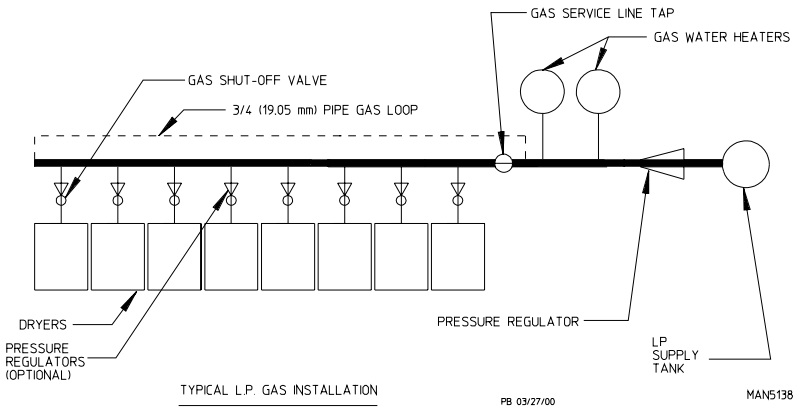
The size of the main gas supply line (header) will vary depending on the distance this line travels from the gas meter or, in the case of L.P. gas, the supply tank, other gas-operated appliances on the same line, etc. Specific information regarding supply line size **should be** determined by the gas supplier.

NOTE: Undersized gas supply piping can create a low or inconsistent pressure, which will result in erratic operation of the burner ignition system.

IMPORTANT: The dryer **is not** provided with an internal gas shutoff and an external gas shutoff ***must be*** provided.



TYPICAL NATURAL GAS INSTALLATION



TYPICAL L.P. GAS INSTALLATION

PB 03/27/00 MAN5138

Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 3/4-inch (19.05 mm) pipe gas loop be installed in the supply line servicing a bank of dryers. An in-line pressure regulator **must be** installed in the gas supply line (header) if the (natural) gas pressure exceeds 12.0 inches (29.9 mb) of water column (W.C.) pressure. Refer to the **illustrations** on the previous page.

NOTE: A water column test pressure of 3.5 inches (8.7 mb) for natural gas and 10.5 inches (26.1 mb) for liquid propane (L.P.) dryers is required at the gas valve pressure tap of each dryer for proper and safe operation.

A 1/8" N.P.T. plugged tap, accessible for a test gauge connection, **must be** installed in the main gas supply line immediately upstream of each dryer.

IMPORTANT: Pipe joint compounds that resist the action of natural gas and L.P. gas ***must be*** used.

IMPORTANT: Test **ALL** connections for leaks by brushing on a soapy water solution (liquid detergent works well).

WARNING: NEVER TEST FOR LEAKS WITH A FLAME!!!

IMPORTANT: The dryer and its individual shutoff valve ***must be*** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

NOTE: The dryer ***must be*** isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure test of the gas supply system at test pressures equal to or less than 1/2 psig (3.5 kPa).

IMPORTANT: The dryer **is not** provided with an internal gas shutoff and an external gas shutoff ***must be*** provided.

H. STEAM INFORMATION

It is your responsibility to have **ALL** plumbing connections made by a qualified professional to ensure that the steam plumbing installation is adequate and conforms to local and state regulations or codes.

Care **must be** exercised when leveling steam dryers into final position. After leveling the dryer, check the downward pitch of the heat exchanger from front to rear with a level. Likewise, check the downward pitch of the return condensate manifold toward its outlet part. Absence of these downward pitches will result in probable water hammer and premature heat exchanger fracture and leakage.

The presence of condensate in the steam will cause water hammer and subsequent heat exchanger failure. The steam supply connection **must be** taken from the top of a well-dripped steam main. If the supply run-out to the dryer exceeds 20 feet (6.1 meters), it **should be** dripped just before the control valve with a proper trap and dirt pocket.

IMPORTANT: Failure to comply with the requirements stipulated in this manual can result in component failure, which will VOID THE WARRANTY.

NOTE: The dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of air (80 psi +/- 10 psi [5.51 bar +/- 0.68 bar]).

1. Steam Coil pH Level

   The normal pH level for copper type steam coils **must be** maintained between a value of 8.5 to 9.5. For steel type steam coils the pH level **must be** maintained between a value of 9.5 to 10.5. These limits are set to limit the acid attack of the steam coils.

IMPORTANT: Coil failure due to improper pH level will VOID THE WARRANTY.

2. Steam Requirements

Operating Steam Pressure		
Maximum	125 psig*	**862 kPa**
Heat Input (Normal Load)	3.0 Bhp	
Consumption (Approximate)	104 lb/hr	**47.2 kg/hr**

Shaded areas are stated in metric equivalents

*The minimum operating pressure for optimum results is 100 psig (689.47 kPa).

3. Installation Instructions

   To ensure an adequate supply of steam is provided, be sure that the steam supply lines and steam return lines are sized and laid out as stipulated in this manual. Inadequate steam supply lines and steam return lines or improper steam plumbing will result in poor performance and can cause component failure. Clean, dry steam **must be** provided to the dryer.

IMPORTANT: Steam coil failure due to water hammer by wet steam will VOID THE WARRANTY.

a. The presence of condensate in the steam supply line will cause water hammer and subsequent heat exchanger (steam coil) failure. The steam supply connection into the main supply line **must be** made with a minimum 10-inch (25.4 cm) riser. This will prevent any condensate from draining towards the dryer.

b. The steam supply line to the dryer must include a 12-inch (30.48 cm) riser along with a drip trap and check valve. This will prevent any condensate from entering the steam coil.

c. Flexible hoses or couplings **must be** used. The dryer vibrates slightly when it runs and this will cause the steam coil connections to crack if they are hard piped to the supply and return mains.

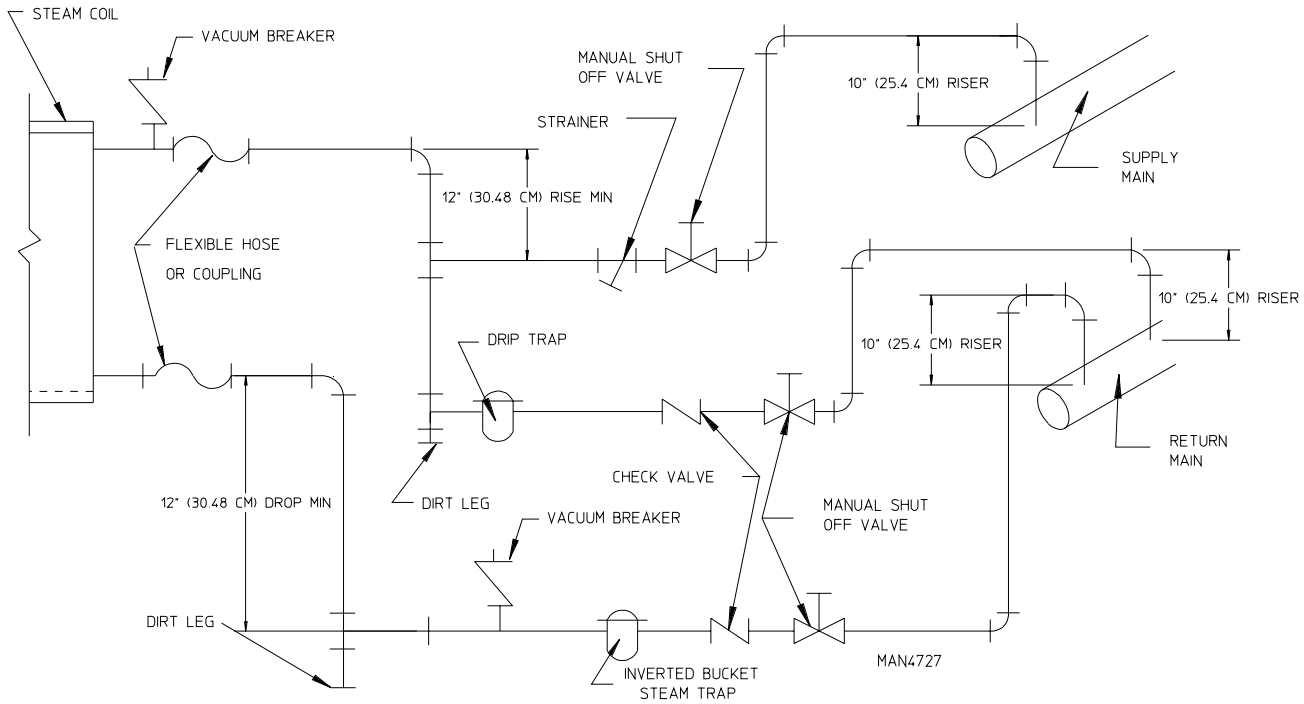
d. Shutoff valves for each dryer **should be** installed in the supply line, return line, and drip trap return line. This will allow the dryer to be isolated from the supply main and the return main if the dryer needs maintenance work.

e. Install an inverted bucket steam trap and check valve at least 12-inches (30.48 cm) below the steam coil as close to the coil as possible. A trap with a capacity of 210 lb (95.3 kg) of condensate per hour at 125 psi (8.62 bar) is needed for each unit.

f. The supply line and the return line **should be** insulated. This will save energy and provide for the safety of the operator and maintenance personnel.

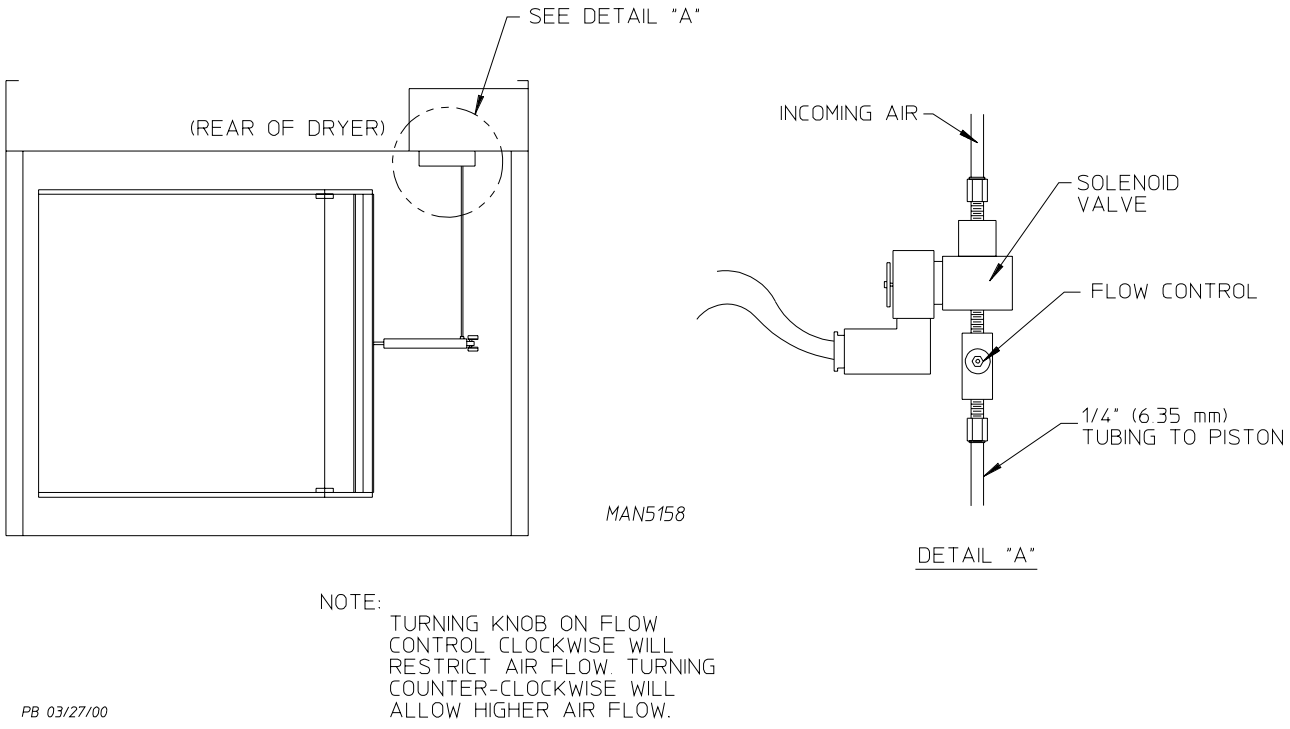
g. Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing steam coil damage. **ALL** horizontal runs of steam supply piping **should be** pitched 1/4-inch (6.35 mm) for every 1 foot (0.30 meters) back towards the steam supply header causing the condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.

IMPORTANT: Flexible hoses/couplings ***must be*** used. Coil failure due to hard plumbing connections will VOID THE WARRANTY.



4. Steam Damper Air System Connections

The dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of compressed air. The air connection is made to the steam damper solenoid valve, which is located at the rear inner top area of the dryer just in front of the electric service relay box.



a. Air Requirements

There is no air requirement for dryers with the electromechanical steam damper option.

Compressed Air Supply	Air Pressure	
Normal	80 psi	**5.51 bar**
Minimum Supply	70 psi	**4.82 bar**
Maximum Supply	90 psi	**6.21 bar**

Shaded areas are stated in metric equivalents

b. Air Connection

Air connection to system – 1/8" N.P.T.

c. Air Regulation

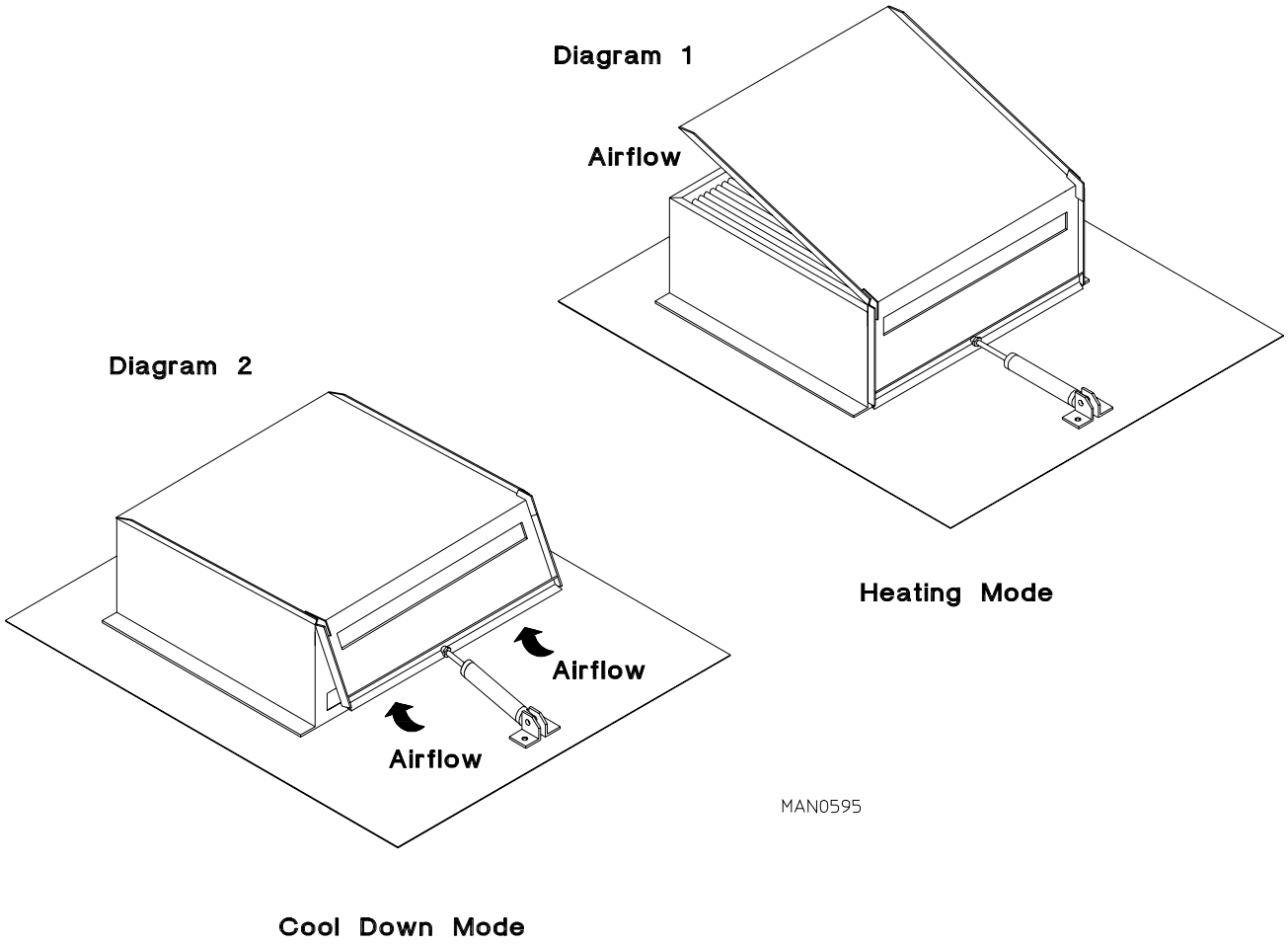
No air regulator or filtration is provided with the dryer. External regulation/filtration of 80 psi (5.51 bar) **must be** provided. It is suggested that a regulator/filter gauge arrangement be added to the compressed air line just before the dryer connection. This is necessary to ensure that correct and clean air pressure is achieved.

5. Steam Damper System Operation

The steam damper, as shown in the **illustration below**, allows the coil to stay constantly charged eliminating repeated expansion and contraction. When the damper is opened, the air immediately passes through the already hot coil, providing instant heat to start the drying process. When the damper is closed, ambient air is drawn directly into the basket (tumbler), allowing a rapid cool down.

Diagram 1 shows the damper in the heating (open) mode, allowing heat into the basket (tumbler).

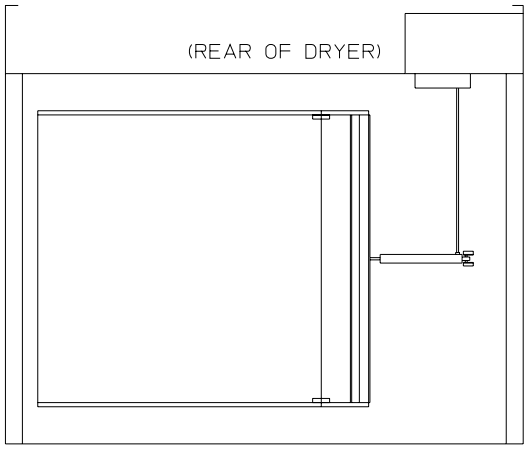
Diagram 2 shows the damper in the cool down (closed) mode, pulling ambient air directly into the basket (tumbler) without passing through the coils.



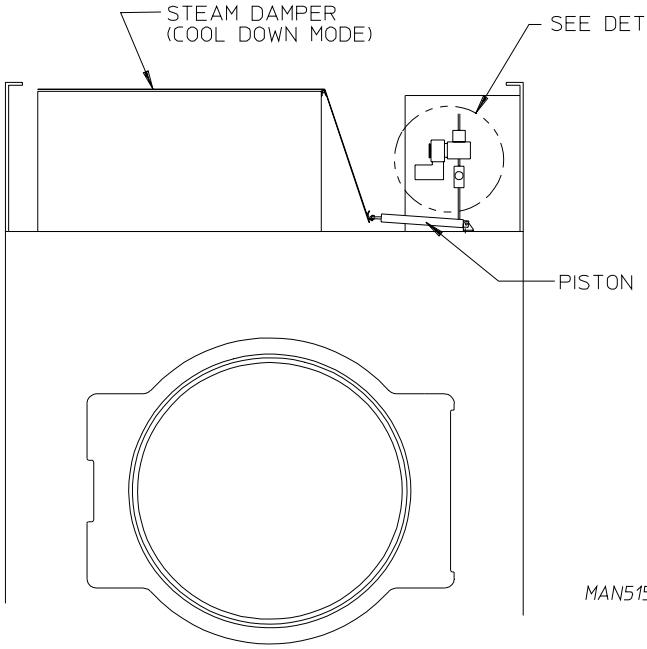
NOTE: With the dryer off or with no air supply, the steam damper is in cool down mode as shown in Diagram 2.

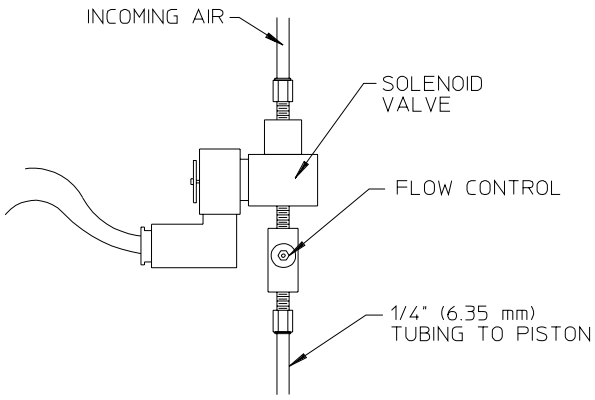
6. Steam Damper Air Piston (Flow Control) Operation Adjustment

Damper operation was tested and adjusted prior to shipping at 80 psi (5.51 bar). If damper air adjustment is necessary, locate the flow control valve and make the necessary adjustments as noted below.



NOTE:
TURNING KNOB ON FLOW CONTROL CLOCKWISE WILL RESTRICT AIR FLOW. TURNING COUNTER-CLOCKWISE WILL ALLOW HIGHER AIR FLOW.





DETAIL "A"

MAN5159 PB 03/27/00

I. PREPARATION FOR OPERATION/START-UP

The following items **should be** checked before attempting to operate the dryer:

1. Read **ALL** "**CAUTION**," "**WARNING**," and "**DIRECTION**" labels attached to the dryer.

2. Check incoming supply voltage to be sure that it is the same as indicated on the dryer data label.

3. **GAS MODELS** – check to ensure that the dryer is connected to the type of heat/gas indicated on the dryer data label.

4. **GAS AND ELECTRIC MODELS** – the sail switch damper assembly was installed and adjusted at the factory prior to shipping. However, each sail switch adjustment **must be** checked to ensure that this important safety control is functioning.

5. Check bolts, nuts, screws, terminals, and fittings for tightness.

6. **GAS MODELS** – be sure that **ALL** gas shutoff valves are in the open position.

7. Check **ALL** back guard panels and service box covers have been replaced.

8. Make sure the lint coop support bracket has been removed.

9. Check the lint door to ensure that it is closed and secured in place.

IMPORTANT: If during installation the lint door safety chain was disconnected, it ***must be*** reconnected or personal injury may result.

10. Rotate the basket (tumbler/drum) by hand to be sure it moves freely.

11. **STEAM MODELS** – check to ensure that a clean, dry, regulated air supply (80 psi [5.51 bar]) is on the dryer (with air operated damper system only).

12. **STEAM MODELS** – check to ensure **ALL** steam shutoff valves are open.

13. **STEAM MODELS** – check steam damper operation.

14. Check basket (tumbler) bearing setscrews to ensure that they are **ALL** tight.

J. PREOPERATIONAL TESTS

ALL dryers are thoroughly tested and inspected before leaving the factory. However, a preoperational test **should be** performed before the dryer is publicly used. It is possible that adjustments have changed in transit or due to marginal location (installation) conditions.

1. Turn on electric power to the dryer.

2. Refer to the Operating Instructions for starting your particular model dryer.

3. **GAS MODELS ONLY**

   a. When a gas dryer is first started (during initial start-up), it has a tendency not to ignite on the first ignition attempt. This is because the gas supply piping is filled with air, so it may take a few minutes for the air to be purged from the lines.

NOTE: During the purging period, check to be sure that **ALL** gas shutoff valves are open.

NOTE: Gas model dryers are equipped with a Direct Spark Ignition (DSI) system, which has internal diagnostics. If ignition **is not** established after two attempts, the heat circuit in the DSI module will lockout until it is manually reset. To reset the DSI system, open and close the main door and restart the dryer.

   b. A gas pressure test **should be** taken at the gas valve pressure tap of each dryer to ensure that the water column (W.C.) pressure is correct and consistent.

NOTE: Water column pressure requirements (measured at the pressure tap of the gas valve body):

Natural Gas ---------- 3.5 Inches (8.7 mb) Water Column.
Liquid Propane (L.P.) Gas ---- 10.5 Inches (26.1 mb) Water Column.

IMPORTANT: There is no regulator provided in an L.P. dryer. The water column pressure ***must be*** regulated at the source (L.P. tank), or an external regulator ***must be*** added to each dryer.

4. Make a complete operational check of **ALL** safety related circuits:

   a. Door Switch(es)

   b. Hi-Limit Thermostats

   c. Cycling Thermostat

   d. **GAS AND ELECTRIC MODELS ONLY** – Sail Switch

NOTE: The sail switch can be checked for proper operation by opening the lint door while heating circuit (gas burner/electric oven) is active (on). The heating unit should shut off within a few seconds. If not, make necessary adjustments to the sail switch.

5. Make a complete operational check of **ALL** operating controls.

NOTE: If computer program changes are required, refer to the computer programming section of the manual supplied with the dryer.

6. The dryer **should be** operated through one (1) complete cycle to ensure that no further adjustments are necessary and that **ALL** components are functioning properly.

BASKET (TUMBLER) COATING

The basket (tumbler) is treated with a protective coating. We suggest dampening old garments or cloth material with a solution of water and nonflammable mild detergent and tumbling them in the basket (tumbler) to remove this coating.

7. Check the electric service phase sequence (3-phase [3ø] models only). While the dryer is operating, check to see if the blower wheel (impellor/fan) is rotating in the proper direction. Looking from the front, the blower wheel (impellor/fan) should spin in the clockwise (CW) direction. If it is, the phasing is correct. If the phasing is incorrect, reverse two (2) of the three (3) leads at connections L1, L2, and L3 of the power supply to the dryer.

IMPORTANT: If the blower wheel (impellor/fan) is rotating in the wrong direction, this **will not** only drastically reduce drying efficiency, but it can also cause premature component failure.

K. PREOPERATIONAL INSTRUCTIONS

COIN MODELS

Microprocessor Controller (Computer)

1. When the microprocessor controller (computer) is in the ready state, the liquid crystal display (L.C.D.) screen will display “Ready, Insert $XX.XX (amount) to Start”.

2. Insert coin(s). Once the correct “Amount to Start” has been inserted, the L.C.D. will display “Select Temperature”.

3. Select temperature by pressing “HI,” “MED,” or “LO.” The cycle will start and the L.C.D. will display the Dry Cycle selected and the remaining time.

4. The dryer will continue through the drying and cooling cycles, until the vended time has expired.

NOTE: To stop dryer, open main door or press the pause key. Continuation of the cycle will resume only after the door has been closed and any of the three (3) temperature selection is pressed.

5. Upon completion of the drying and cooling cycles, the tone (buzzer) will sound and the dryer will go into the Anti-Wrinkle Mode for 99 minutes, or until the main door has been opened.

IMPORTANT: For more detailed information regarding the microprocessor controller (computer) on the dryer, refer to the microprocessor user’s manual included with the dryer.

NON-COIN MODELS

1. The light emitting diode (L.E.D.) display reads “READY” (no cycle in progress).

2. Press the letter on the keyboard (touch pad) corresponding to the cycle desired (i.e., key “D”).

3. The dryer will then start (i.e., blower, basket [tumbler], and heat).

4. The L.E.D. display will read MANUAL DRYING CYCLE D, 00:00 MIN REMAIN.

NOTE: Press and hold the “UP ARROW” to view the basket (tumbler) temperature at any time.

NOTE: The dryer can be stopped at any time by pressing the “STOP/CLEAR” key, at this time the dryer will go into a cycle pause. If the “STOP/CLEAR” key is pressed again at this point, the cycle that was in progress **will be** cancelled and returned to the “READY” state.

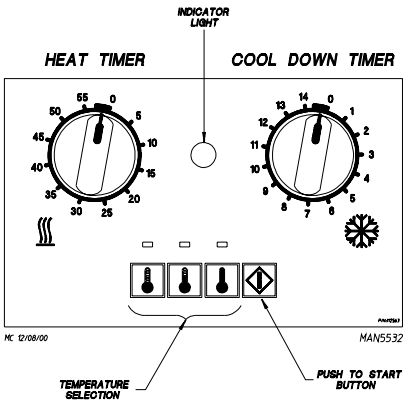
NOTE: Press and hold the “DOWN ARROW” to view the basket (tumbler) RPM.

5. When the programmed drying time has expired, the Phase 7 non-coin microprocessor controller (computer) will proceed into the Cool Down Cycle.

6. Once the Cool Down Cycle begins at the end of the heat cycle, the L.E.D. display will read COOL DOWN TEMP ___/___ MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and basket (tumbler) until the Cool Down Time or temperature is reached.

IMPORTANT: For more detailed information regarding the microprocessor controller (computer) on your dryer, refer to the microprocessor user’s manual included with the dryer.

DUAL TIMER DRYERS



1. Turn drying timer knob for a time of 20 minutes.

2. Select “High Temp.”

3. Push “Push to Start” button.

4. To stop dryer, open the main door.

   Spin and dwell (stop) times are adjustable at the reversing timer.

L. SHUTDOWN INSTRUCTIONS

If the dryer is to be shut down (taken out of service) for a period of time, the following **must be** performed:

1. Discontinue power to the dryer either at the external disconnect switch or the circuit breaker.
2. Discontinue the heat supply:
    a. ***GAS MODELS* – discontinue the gas supply**.
        1) **SHUT OFF external gas supply shutoff valve**.
        2) **SHUT OFF internal gas supply shutoff valve located in the gas valve burner area**.
    b. ***STEAM MODELS* – discontinue the steam supply**.
        1) **SHUT OFF external (location furnished) shutoff valve**.
        2) **SHUT OFF internal steam valves in the supply lines and the return lines**.

SECTION IV

SERVICE/PARTS INFORMATION

A. SERVICE

Service **must be** performed by a qualified trained technician, service agency, or gas supplier. If service is required, contact the distributor from whom the **JLA** equipment was purchased. If the distributor **cannot** be contacted or is unknown, contact the **JLA** Service Department for a distributor in your area.

NOTE: When contacting the **JLA** Service Department, be sure to give them the correct **model number** and **serial number** so that your inquiry is handled in an expeditious manner.

B. PARTS

Replacement parts **should be** purchased from the distributor from whom the **JLA** equipment was purchased. If the distributor **cannot** be contacted or is unknown, contact the **JLA** Parts Department for a distributor in your area. Parts may also be purchased directly from **JLA** Parts Department by calling 01422 822282 or you may FAX in your order at 01422 824390.

NOTE: When ordering replacement parts from the **JLA** distributor or **JLA**, be sure to give them the correct **model number** and **serial number** so that your parts order can be processed in an expeditious manner.

SECTION V
WARRANTY INFORMATION

A. RETURNING WARRANTY CARDS

Before any dryer leaves the factory test area, a warranty card is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.

If a warranty card did not come with your dryer, contact the **JLA** Warranty Department.

IMPORTANT: A separate warranty card ***must be*** completed and returned for each individual dryer.

NOTE: Be sure to include the installation date when returning the warranty card(s).

B. WARRANTY

For a copy of the **JLA** commercial warranty covering your particular dryer(s), contact the **JLA** distributor from whom you purchased the equipment and request a dryer warranty form. If the distributor **cannot** be contacted or is unknown, warranty information can be obtained from **JLA** by contacting the **JLA** Warranty Department.

NOTE: Whenever contacting **JLA** for warranty information, be sure to have the dryer's **model number** and **serial number** available so that your inquiry can be handled in an expeditious manner.

SECTION VI
ROUTINE MAINTENANCE

A. CLEANING

A program and/or schedule **should be** established for periodic inspection, cleaning, and removal of lint from various areas of the dryer, as well as throughout the ductwork system. The frequency of cleaning can best be determined from experience at each location. Maximum operating efficiency is dependent upon proper air circulation. The accumulation of lint can restrict this airflow. If the guidelines in this section are met, the dryer will provide many years of efficient, trouble free, and most importantly, safe operation.

WARNING: LINT FROM MOST FABRICS IS HIGHLY COMBUSTIBLE. THE ACCUMULATION OF LINT CAN CREATE A POTENTIAL FIRE HAZARD.

WARNING: KEEP DRYER AREA CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE, AND OTHER FLAMMABLE VAPORS AND LIQUIDS.

NOTE: Suggested time intervals shown are for average usage, which is considered six (6) to eight (8) operational (running) hours per day.

IMPORTANT: Dryer produces combustible lint and ***must be*** exhausted to the outdoors. Every 6 months, inspect the exhaust ducting and remove any lint buildup.

SUGGESTED CLEANING SCHEDULE

EVERY THIRD OR FOURTH LOAD

Clean the lint screen every third or fourth load. A clogged lint screen will cause poor dryer performance. The lint screen is located behind the lint door in the base of the dryer. Open the lint door, brush the lint off the lint screen, and remove the lint. Inspect lint screen and replace if torn.

NOTE: The frequency of cleaning the lint screen can best be determined from experience at each location.

WEEKLY

Clean lint accumulation from lint chamber, thermostat, and microprocessor temperature sensor (sensor bracket) area.

WARNING: TO AVOID THE HAZARD OF ELECTRICAL SHOCK, DISCONTINUE ELECTRICAL SUPPLY TO THE DRYER.

STEAM DRYERS

Clean the steam coil fins. It is suggested that compressed air and a vacuum cleaner with brush attachment be used.

WARNING: When cleaning steam coil fins, be careful not to bend the fins. If fins are bent, straighten by using a fin comb, which is available from local air-conditioning supply houses.

90 DAYS

Inspect and remove lint accumulation in customer furnished exhaust ductwork system and from dryer's internal exhaust ducting.

WARNING: THE ACCUMULATION OF LINT IN THE EXHAUST DUCTWORK CAN CREATE A POTENTIAL FIRE HAZARD.

WARNING: ***DO NOT*** OBSTRUCT THE FLOW OF COMBUSTION AND VENTILATION AIR.

WARNING: INSPECT AND REMOVE ANY LINT ACCUMULATION, WHICH CAN CAUSE THE BACK DRAFT DAMPER TO BIND OR STICK.

NOTE: A back draft damper that is sticking partially closed can result in slow drying and shutdown of heat circuit safety switches or thermostats.

NOTE: When cleaning the dryer cabinet(s), avoid using harsh abrasives. A product intended for the cleaning of appliances is recommended.

B. ADJUSTMENTS

7 DAYS AFTER INSTALLATION AND EVERY 6 MONTHS THEREAFTER

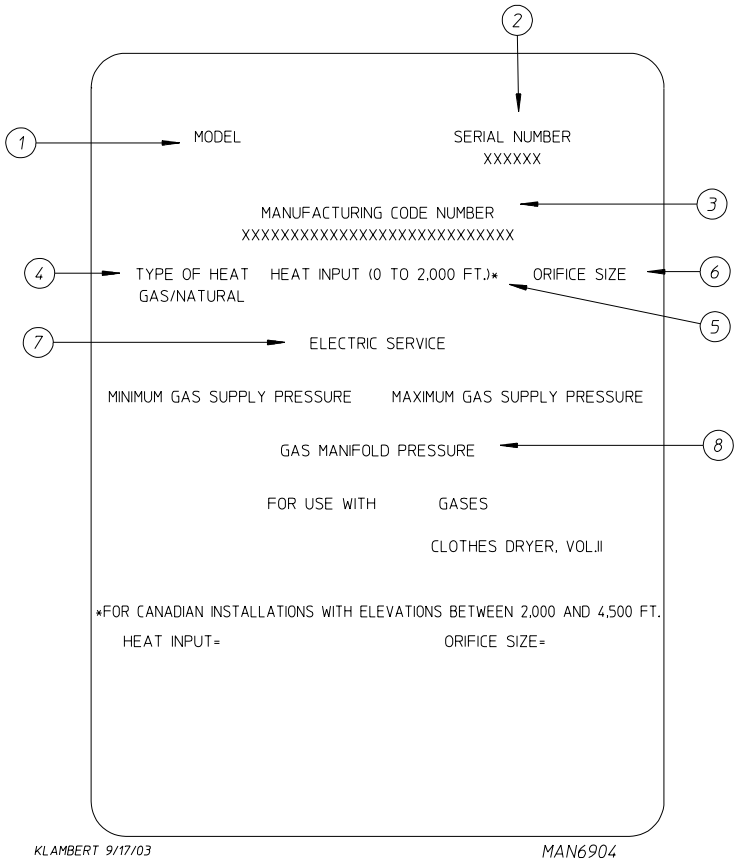
Inspect bolts, nuts, screws, setscrews, grounding connections, and nonpermanent gas connections (unions, shutoff valves, and orifices). Motor and drive belts **should be** examined. Cracked or seriously frayed belts **should be** replaced. Tighten loose V-belts when necessary. Complete operational check of controls and valves. Complete operational check of **ALL** safety devices (door switches, sail switch, burner, and hi-limit thermostats).

C. LUBRICATION

The motor bearings, idler bearings, and under normal/most conditions the basket (tumbler) bearings are permanently lubricated. It is physically possible to relubricate the basket (tumbler) bearings if you choose to do so even though this practice is not necessary. Use Shell Alvania #2 or its equivalent. The basket (tumbler) bearings used in the dryer **DO NOT** have a grease fitting. Provisions are made in the bearing housing for the addition of a grease fitting, which can be obtained elsewhere, or from **JLA** by ordering kit Part No. 882159, which includes two (2) fittings.

SECTION VII

DATA LABEL INFORMATION



When contacting **JLA,** certain information is required to ensure proper service/parts information from **JLA**. This information is on the data label, affixed to the left side panel area behind the top control (access) door. When contacting **JLA** please have the **model number** and **serial number** available.

1. **MODEL NUMBER** – Describes the size of the dryer and the type of heat (gas, electric, or steam).

2. **SERIAL NUMBER** – Allows the manufacturer to gather information on your particular dryer.

3. **MANUFACTURING CODE NUMBER** – The number issued by the manufacturer, which describes **ALL** possible options on your particular model.

4. **TYPE OF HEAT** – This describes the type of heat for your particular dryer, gas (either natural gas or liquid propane [L.P.] gas), electric, or steam.

5. **HEAT INPUT** (for GAS DRYERS) – This describes the heat input in British thermal units per hour (Btu/hr).

6. **ORIFICE SIZE** (for GAS DRYERS) – Gives the number drill size used.

7. **ELECTRIC SERVICE** – This describes the electric service for your particular model.

8. **GAS MANIFOLD PRESSURE** (for GAS DRYERS) – This describes the manifold pressure taken at the gas valve tap.

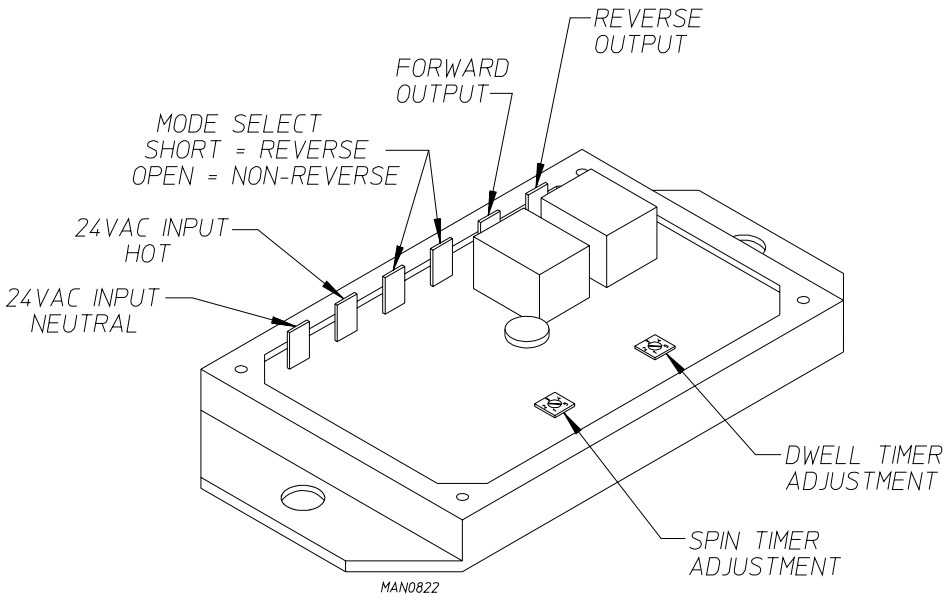
SECTION VIII

REVERSING TIMER SPIN/DWELL ADJUSTMENTS

(FOR NON-COIN MECHANICAL TIMER MODELS ONLY)

Dual timer models with “reversing option” have an electric reversing timer in the electric service box, which is located in the upper rear area of the dryer.

Both the dwell (stop) time and basket (tumbler) spin time are adjustable by mode selection switches located on the electronic timer (as noted in the **illustration below**).



TIMING LEGEND					
SPIN TIME					
Adjustment Position Number	1	2	3	4	5
Time in Seconds*	30	60	90	120	150
DWELL (STOP) TIME					
Adjustment Position Number	1	2	3	4	5
Time in Seconds*	5	6.3	7.6	8.9	10.2
* Values shown are +/- 1-second.					

Notes